

ABSTRACT OF THE DISCLOSURE

An input/output hub includes an inbound ordering queue (IOQ) to receive inbound transactions. All read and write transactions have a transaction completion. Peer-to-peer transactions are not permitted to reach a destination until after all prior writes in the IOQ have been completed. A write in a peer-to-peer transaction does not permit subsequent accesses to proceed until the write is guaranteed to be in an ordered domain of the destination. An IOQ read bypass buffer is provided to receive read transactions pushed from the IOQ to permit posted writes and read/write completions to progress through the IOQ. An outbound ordering queue (OOQ) stores outbound transactions and completions of the inbound transactions. The OOQ also issues write completions for posted writes. An OOQ read bypass buffer is provided to receive read transactions pushed from the OOQ to permit posted writes and read/write completions to progress through the OOQ. An unordered domain within the input/output hub receives the inbound transactions transmitted from the IOQ and receives the outbound transactions transmitted from an unordered protocol.